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Origin of the Resistive Transition Broadening for Superconducting Magnesium Diboride

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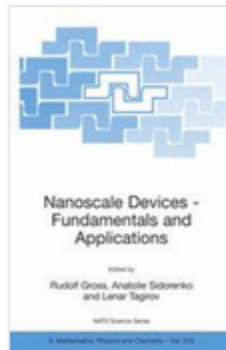
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Abstract

The origin of the superconducting transition broadening for the novel superconductor MgB₂ is investigated. The dominant role of twodimensional fluctuations and thermally activated flux flow in the vicinity of the critical temperature is found to be responsible for the resistivity of MgB₂ near the superconducting transition. The reasons of the observed extraordinary strong magnetic field dependence of the activation energy of the flux motion are discussed.

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